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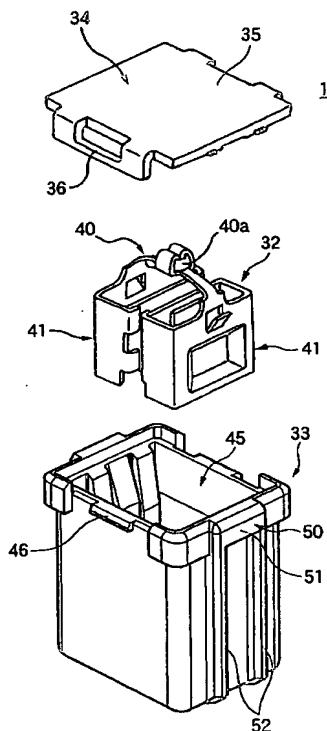
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(54) Title: FUSE



(57) Abstract: A fuse 1 of the present invention includes a fuse body 32, a housing 33 which is made of an insulative resin, and receives and holds the fuse body therein, the fuse body being inserted into the housing through an upper opening in the housing, and a cover 34 which is made of an insulative resin, and covers the upper opening in the housing. Retaining portions 50, corresponding respectively to retaining claws 47 of a withdrawing jig for withdrawing the housing, are formed at a side surface of the housing. Therefore, the retaining claws of the withdrawing jig can be positively fixed to the housing, and a relatively large force is not required for the withdrawing operation, and therefore the withdrawing operation can be effected efficiently.



Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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INTERNATIONAL SEARCH REPORT

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B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

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C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 88 14 927 U (AMP INC.) 12 January 1989 (1989-01-12) the whole document	1,2
X	JP 08 017328 A (YAZAKI CORP) 19 January 1996 (1996-01-19) the whole document	1,2
Y	JP 2001 195971 A (YAZAKI CORP) 19 July 2001 (2001-07-19) the whole document	1,2
Y	EP 0 710 974 A (SUMITOMO WIRING SYSTEMS) 8 May 1996 (1996-05-08) the whole document	1,2
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 239 282 A (FILOMIA DOMINGO R) 24 August 1993 (1993-08-24) the whole document -----	1

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
PCT/JP2004/001826

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
DE 8814927	U	12-01-1989	DE 8814927 U1	12-01-1989
JP 08017328	A	19-01-1996	JP 2872045 B2	17-03-1999
			DE 19523820 A1	18-01-1996
			US 5739741 A	14-04-1998
JP 2001195971	A	19-07-2001	NONE	
EP 0710974	A	08-05-1996	JP 8138526 A	31-05-1996
			JP 8138527 A	31-05-1996
			DE 69510639 D1	12-08-1999
			DE 69510639 T2	27-01-2000
			EP 0710974 A1	08-05-1996
			US 5666865 A	16-09-1997
US 5239282	A	24-08-1993	AU 656796 B2	16-02-1995
			AU 2214892 A	22-04-1993
			BR 9203921 A	27-04-1993
			CN 1071532 A , B	28-04-1993
			DE 69212944 D1	26-09-1996
			DE 69212944 T2	13-03-1997
			EP 0536984 A2	14-04-1993
			JP 5205608 A	13-08-1993
			KR 9704310 B1	26-03-1997